

Application Number 09/629,892
Amendment dated January 21, 2005
Reply to Office action of September 20, 2004

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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Amended): A multi-protocol receiver for receiving wireless transmissions comprising:

a plurality of RF receiver units each receiving a wireless signal and outputting a broadband IF signal;

a plurality of tunable down converter units, each able to tune over a frequency range of all of said broadband IF signal of all of said RF receiver units, and said plurality of tunable down converter units output raw I and Q signals;

a plurality of tunable filters receiving said raw I and Q signals from one of said plurality of tunable down converter units and providing filtered I and Q output signals;

a switch for connecting-coupling a selected RF receiver unit of said plurality of RF receiver units to a selected one of said plurality of tunable down converter units; and

a management unit receiving a request for a specific frequency band and setting a tuning frequency of a selected one of said plurality of tunable down converter units, setting filter parameters of a selected one of said plurality of tunable filters, and setting said switch.

Claim 2 (Amended): The multi-protocol receiver~~The receiver~~ as claimed in claim 1, further comprising a plurality of ADC units each connected to one of said plurality of RF~~said RF~~ receiver units, wherein said switch connects a broadband digital output of said plurality of ADC~~said ADC~~ units to said plurality of~~tunable~~said-tunable down converter units.

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Claim 3 (Amended): The multi-protocol receiver~~The receiver~~ as claimed in claim 1, wherein~~wherein~~ the management unit comprises:

a channel selection signal input;

a memory for storing said filter parameters for channels from said broadband IF signal of all of said RF receiver units and frequency parameters for all of said tunable down converter units and switch parameters;

an interpreter receiving a selection signal and setting said filter parameters, said tunable down converters, and said switch parameters based on data stored in said memory.

Claim 4 (Amended): The multi-protocol receiver~~The receiver~~ as claimed in claim 2, wherein~~wherein~~ the management unit comprises:

a channel selection signal input;

a memory for storing said filter parameters for channels from said broadband IF signal of all of said RF receiver units and frequency parameters for all of said tunable down converter units and switch parameters;

an interpreter receiving said selection signal and setting said filter parameters, said tunable down converters, and said switch parameters based on data stored in said memory.

Claim 5 (Amended): The multi-protocol receiver~~The receiver~~ as claimed in claim 1, wherein~~wherein~~ there are at least two of said tunable down converter units in order to receive full duplex conversations.

Claim 6 (Amended): The multi-protocol receiver~~The receiver~~ as claimed in claim 2, wherein~~wherein~~ there are at least two of said tunable down converter units in order to receive full duplex conversations.

Claim 7 (Amended): The multi-protocol receiver~~The receiver~~ as claimed in claim 4, wherein~~wherein~~ there are at least two of said tunable down converter units in order to receive full duplex conversations, said memory for storing switch

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parameters provides information for allocating said at least two of said tunable down converter units to said full duplex conversations.

Claim 8 (Amended): The multi-protocol receiver~~The receiver~~ as claimed in claim 1, wherein a plurality of said RF receiver units, each receives a portion of a single frequency band.

Claim 9 (Amended): The multi-protocol receiver~~The receiver~~ as claimed in claim 1, wherein a single frequency band, larger than one handled by a single one of said RF receiver unit, is handled by a plurality of said RF receiver units.

Claim 10 (Amended): The multi-protocol receiver~~The receiver~~ as claimed in claim 2, ~~wherein~~ wherein a tunable filter of said plurality of tunable filters is an N tap FIR filter.

Claim 11 (Amended): The multi-protocol receiver~~The receiver~~ as claimed in claim 2, ~~wherein~~ wherein said switch is an FPGA.

Claim 12 (Amended): The multi-protocol receiver~~The receiver~~ as claimed in claim 1, ~~wherein~~ wherein each of said RF receiver units handles at least 25 MHz bandwidth signal.

Claim 13 (Amended): The multi-protocol receiver~~The receiver~~ as claimed in claim 2, ~~wherein~~ wherein each of said ADC units performs the conversion at a rate of at least 50 MHz.

Claim 14 (Amended): A method for receiving a wireless communication with a device which comprises a plurality of RF receiver units, a plurality of tunable down converter units, a plurality of tunable filters, a switch and comprising the steps of:~~A method for receiving a wireless communication with a device which comprises a plurality of RF receiver units, at least one tunable down converter unit, at least one tunable filter, a switch and comprising the steps of:~~

receiving a request for a specific frequency band and setting a tuning frequency of a selected one of said plurality of tunable down converter units;

setting filter parameters of a selected one of said plurality of tunable filters;

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setting said switch in order to couple one of said plurality of RF receiver units to one of said plurality of tunable down converter units;

~~receiving at least one selected channel input signal;~~

~~— interpreting said received at least one selected channel input signal to provide parameters for said at least one tunable down converter unit, for said at least one tunable filter unit and for said switch;~~

receiving a wireless signal from an antenna and outputting an IF broadband signal;

~~switching said switch in order to connect one of said RF receiver units to one of said tunable down converter unit using said parameters;~~

down converting the IF broadband signal to provide a raw I and Q signals;
and

filtering the raw I and Q signals to provide filtered I and Q~~provide I and Q~~ signals.

Claim 15 (Original): A method as claimed in claim 14 additionally comprising the step of:

digitizing said IF broadband signal by an ADC unit before said switching.

Claim 16 (Amended): A method as claimed in claim 14, wherein~~wherein~~ the step of switching said switch is directed by a management unit.

Claim 17 (Amended): A method as claimed in claim 15, wherein~~wherein~~ the step of switching said switch is directed by a management unit.

Claim 18 (Canceled)

Claim 19 (Amended): The management unit as claimed in claim 3, wherein~~wherein~~ the interpreter is a Digital Signal Processor (DSP).